

AMENDMENTS TO THE CLAIMS

1.-33 (Canceled)

34. (Currently Amended) A method of generating a monophonic output from a pair of input signals, the method comprising:

phase adjusting enhancing a first input to an audio enhancement system to produce enhanced phase adjusted first information;

enhancing a second input to the audio enhancement system to produce enhanced second information;

inverting the enhanced second information; and

combining at least a portion of the enhanced phase adjusted first information with at least a portion of the inverted enhanced second information to generate an enhanced monophonic output, such that a difference between 1) a first phase response of the audio enhancement system to the first input being a unity input and 2) a second phase response of the audio enhancement system to the second input being a unity input, is greater than zero for frequencies in the range of about 100 Hz to about 10 kHz.

35. (Currently Amended) The method of Claim 34 further comprising:

phase adjusting enhancing the first input to produce phase adjusted enhanced first information; and

phase adjusting the second input to produce phase adjusted second information, wherein the act of combining combines at least a portion of the phase adjusted first information, at least a portion of the phase adjusted second information, at least a portion of the enhanced first information, and at least a portion of the inverted enhanced second information to generate an enhanced monophonic output.

36. (Currently Amended) The method of Claim 34 35 wherein the act of enhancing the first input and the act of enhancing the second input comprises adjusting an amplitude of the first input and adjusting an amplitude of the second input.

37. (Currently Amended) The method of Claim 34 35 wherein the act of enhancing the first input and the act of enhancing the second input comprises adjusting

an amplitude and phase of the first input and adjusting the amplitude and phase of the second input.

38. (Currently Amended) The method of Claim 37 wherein adjusting the phase modifies a frequency response at frequencies where the frequency responses of an audio enhancement system have approximately equal amplitudes and opposite phases so as to preserve audio information at the frequencies phase adjusting the first input comprises applying a phase filter to the first input, the phase filter having a greater phase angle at higher frequencies relative to a phase angle at lower frequencies.

39. (Currently Amended) The method of Claim 34 further comprising reproducing audio from the enhanced monophonic output through a speaker wherein the acts of enhancing are dependent on speaker characteristics of the speaker wherein the difference between 1) the first phase response of the audio enhancement system to the first input being a unity input and 2) the second phase response of the audio enhancement system to the second input being a unity input, is less than 180 degrees for frequencies in the range of about 100 Hz to about 10 kHz.

40. (Currently Amended) The method of Claim 34 35 wherein the acts of enhancing the first input and the second input comprise filtering and adjusting the gain of the first input and the second input.

41. (Currently Amended) The method of Claim 34 wherein the acts of phase adjusting enhancing to produce phase adjusted enhanced first information, enhancing to produce enhanced second information, inverting the enhanced second information, and combining to generate the enhanced monophonic output are performed by a digital signal processor.

42. (Withdrawn) The method of Claim 34 further comprising synthetically generating the first and second inputs.

43. (Withdrawn) The method of Claim 42 wherein the act of synthetically generating the first and second inputs comprises providing a monophonic input as the first input and delaying the monophonic input to produce the second input.

44. (Currently Amended) An audio enhancement apparatus to produce a single output signal from a pair of input signals, the apparatus comprising:

a first enhancer phase adjuster operatively coupled to a first input to an audio enhancement system to produce enhanced phase adjusted first information;

a second first enhancer operatively coupled to a second input to an audio enhancement system to produce enhanced second information;

an inverter to invert the enhanced second information; and

a mixer that combines at least a portion of the enhanced phase adjusted first information with at least a portion of the inverted enhanced second information to generate an enhanced monophonic output, such that a difference between 1) a first phase response of the audio enhancement system to the first input being a unity input and 2) a second phase response of the audio enhancement system to the second input being a unity input, is greater than zero for frequencies in the range of about 100 Hz to about 10 kHz.

45. (Currently Amended) The apparatus of Claim 44 further comprising:
a first phase adjuster second enhancer that adjusts a phase of enhances the first input to produce phase adjusted enhanced first information; and

a second phase adjuster that adjusts the phase of the second input to produce phase adjusted second information, wherein the mixer combines at least a portion of the phase adjusted first information, at least a portion of the phase adjusted second information, at least a portion of the enhanced first information, and at least a portion of the inverted enhanced second information to generate an enhanced monophonic output.

46. (Currently Amended) The apparatus of Claim [[44]] 45 wherein the first enhancer comprises a first gain control device and the second enhancer comprises a second gain control device.

47. (Currently Amended) The apparatus of Claim [[44]] 45 wherein the first enhancer comprises a first phase adjuster and a first gain control device and the second enhancer comprises a second phase adjuster and a second gain control device.

48. (Currently Amended) The apparatus of Claim 47 wherein the phase adjuster modifies a frequency response at frequencies where the frequency responses of the audio enhancement apparatus have approximately equal amplitudes and

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opposite phases so as to preserve audio information at the frequencies the first phase adjuster applies a phase filter to the first input, the phase filter having a greater phase angle at higher frequencies relative to a phase angle at lower frequencies.

49. (Currently Amended) The apparatus of Claim 44 further comprising a speaker wherein parameters of the first and second enhancers are dependent on speaker characteristics of the speaker wherein the difference between 1) the first phase response of the audio enhancement system to the first input being a unity input and 2) the second phase response of the audio enhancement system to the second input being a unity input, is less than 180 degrees for frequencies in the range of about 100 Hz to about 10 kHz.

50. (Currently Amended) The apparatus of Claim [[44]] 45 wherein the first enhancer comprises a first filter and a first gain control device and the second enhancer comprises a second filter and a second gain control device.

51. (Currently Amended) The apparatus of Claim 44 further comprising a digital signal processor wherein the digital signal processor implements the first phase adjuster, the first enhancer, the second enhancer, and the mixer.

52. (Withdrawn) The apparatus of Claim 44 further comprising a monophonic input and a stereo synthesizer wherein the stereo synthesizer synthesizes the first input and the second input from the monophonic input.

53. (Withdrawn) The apparatus of Claim 52 wherein the stereo synthesizer comprises a delay.